UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,023	01/16/2004	Tomochika Murakami	00862.023401.	6269

5514   7590   08/21/2008
FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
ABDI, AMARA

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
08/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/758,023	MURAKAMI ET AL.
Office Action Summary	Examiner	Art Unit	
	Amara Abdi	2624	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 June 2008</u>.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,2,4-6,13 and 17-19</u> is/are pending in the application.
    4a) Of the above claim(s) <u>3,7-12,14-16 and 20</u> is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1,2,4-6,13 and 17-19</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>1/16/2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 04, 2008 has been entered.

2.   Applicant's response to the last office action, filed June 04, 2008 has been entered and made of record.

3.   In view of the Applicant arguments, the rejection of claims 4 and 5 under 35 U.S.C 112 is expressly withdrawn.

4.   In view of the Applicant arguments, the objection to the specification is expressly withdrawn.

Remarks:

5.   Applicant's arguments with respect to claims 1-2, 4-6, 13, and 17-20 have been considered but are moot in view of the new ground(s) of rejection: Tian (US 6,968,072), and Koga et al. (US-PGPUB 2002/0064307).

Applicant argues (Page 10, line 8-16) that the cited art fails to disclose or suggest reducing a size of an image corresponding to a first region of an original image, using the binarized reduced image an additional information to generate watermark

information, and replacing an image corresponding to a second region with the watermark information after it has been error-correction encoded and reconstructed. Moreover, that reference does not disclose or suggest that a reduction ratio is determined in advance so that a size of the reconstructed watermark information is less that or equal to a size of the image corresponding to the second region.

However, in response to the Applicant's arguments and amendments, the Examiner has introduced a prior art reference of US-PGPUB 2002/0064307 to Koga et al., where binarizing the image to generate the binary image (Fig. 7, paragraph [0139], line 10-14); and reducing the size of an image (paragraph [0291], line 4-5), using the reduction ratio (paragraph [0291], line 6-7). The Examiner would like to point out that the use of the reduction size, being determined in advance, has no support in the specification, therefore, it is considered as a new matter (see the rejection of claims 1 and 13 under 35 U.S.C 112). In response to the applicants Arguments and Amendments, that a size of the watermark information being equal to or less than the size of the image corresponding to the second region, the Examiner has introduced a prior reference (US 6,968,072) to Tian, where encoding the information (watermark information) such that it has a format compatible to the format of the image where the information is to be inserted (second region) (column 12, line 29-32), (the encoding of the information being in compatible format of the image is read as the same concept as the size of the watermark information being equal or less than the size of the image corresponding the second region).

Therefore, claims 1 and 13, and the dependents claims are still not in condition

for allowance.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of
making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
set forth the best mode contemplated by the inventor of carrying out his invention.

7.   Claims 1 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention. Claims 1 and 13 recite the limitation: "wherein

a reduction ratio used by said reduction means is determined in advance". There is no

support for this limitation in the specification, therefore, it is considered as a new matter.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-2, 4-6, 13, and 17-19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Iwamura (US-PGPUB 2003/0012406) in view of Pelly et al. (US-

PGPUB 2003/0009674), Tian (US 6,968,072), and Koga et al. (US-PGPUB 2002/0064307).

(1) Regarding claims 1 and 13:

Iwamura discloses an image processing method and apparatus (paragraph [0001], line 2-3) for generating information (paragraph [0071], line 2-3) that allows detecting a position of tampering for an original image (paragraph [0001], line 3-4, and paragraph [0118], line 4-6), comprising:

watermark information generating means (process 104 in Fig. 1) for generating watermark information which contains the binary image and additional information (paragraph [0078], line 1-9), (the binary image and additional information is read as an information associated with the image); and

output means (302 in Fig. 3) for outputting, as an output image, an image formed by replacing an image corresponding to the second region in the original image with the encoded watermark information (paragraph [0111], line 1-3), (the embedding bits in B component of the original image is read as the same concept as replacing of the information of the second region with a watermark information).

Iwamura does not explicitly mention the following limitation the first and second region , the second region being a bit plane that consist of least significant bits of the original image, and the first region consisting of all bit planes forming the original image other than the bit plane corresponding to the second region, comprising reduction means for reducing a size of an image corresponding to the first region; a binary image generating means for generating a binary image; an error-correction encoding means

for generating error-correction encoded watermark information by making error-correction encoding of the watermark information; reconstructing means for reconstructing the error-correction encoded watermark information by varying an arrangement order of each bit which forms the error-correction encoded watermark information; wherein a reduction ratio used by the reduction means is determined in advance so that a size of the watermark information reconstructed by the reconstructing means is equal to or less than a size of the image corresponding to the second region.

(a) Obviousness in view of Pelly et al.

Pelly et al., in analogous environment, teaches a method and apparatus for detecting data, where the original image is formed of first and second regions (paragraph [0012], line 10-15), error-correction encoding means for generating error-correction encoded watermark information by making error-correction encoding of the watermark information (paragraph [0017], line 4-8), and reconstructing means for reconstructing the error-correction encoded watermark information by varying an arrangement order of each bit which forms the error-correction encoded watermark information (paragraph [0018], line 3-7).

It would have obvious to one having ordinary skill in the art at the time the invention was made to use the system of Pelly et al., where generating an error correction, in the system of Iwamura, in order to provide an improvement in copyright protection. The copyright protection is generally performed at a highest level to the watermarking system, so that by providing an Additional copyright protection layer on

top of an existing watermarking layer, copyright protection of material can be facilitated

(paragraph [0011], line 6-11).

   (b) Obviousness in view of Tian

   Tian, in analogous environment, teaches an image sensor with built-in

steganographic and watermarking functions, where the image is configured as a

plurality of bit planes (110-180). Bit plan 180 is the k (and least significant bit plan),

(second region), and bit planes 110, 120, 130 (first region) are representing bit planes

forming the image other than bit plane 180 (least significant bit plan) (Fig. 4, column 7,

line 12-27), and wherein the encoding of the information such that it has a format

compatible to the format of the image where the information is to be inserted (second

region) (column 12, line 29-32), (the encoding of the information being in compatible

format of the image is read as the same concept as the size of the watermark

information being equal or less than the size of the image corresponding the second

region).

   It would have obvious to one having ordinary skill in the art at the time the

invention was made to use the system of Tian, where one region being a bit plane

consisting of LSB and the other region being a bit plane consisting of bit planes other

than the bit plane corresponding to the first region, in the system of Iwamura, in order

for automatically accomplishing steganography without seriously degrading image

quality (column 1, line 41-41-46).

(c) Obviousness in view of Koga et al.

Koga et al., in analogous environment, teaches an image processing apparatus and method, where binarizing the image to generate the binary image (Fig. 7, paragraph [0139], line 10-14), (the binarizing of the image is read as the same concept as the binarizing of reduced image), reducing the size of an image (paragraph [0291], line 4-5), using the reduction ratio (paragraph [0291], line 6-7), (the reducing of the size of the input image is read as the same concept as the size of an image corresponding to the first region).

It would have obvious to one having ordinary skill in the art at the time the invention was made to use the system of Koga et al., where reducing the size of the input image, in the system of Iwamura, in order to provide an image processing apparatus and method in which excellent processing is applied to a color image in which image segments having different characteristics are mixed (paragraph [0028], line 1-5).

(2) Regarding claim 2:

Iwamura further discloses an apparatus (paragraph [0071], line 2-3), further comprising:

encryption means (process 201 in Fig. 2) for encrypting the watermark information generated by said watermark information generation means (paragraph [0086], and paragraph [0087], line 1-3), and

wherein said error-correction encoding means makes error-correction encoding of the watermark information encrypted by said encryption means (paragraph [0127],

line 4-6; and paragraph [0128], line 1-3), (the generating of check bits for the encrypted

blocks is read as the same concept as the error-correction encoding of the watermark

information).

(3) Regarding claim 4:

Iwamura further discloses an apparatus (paragraph [0071], line 2-3), further

comprising:

Hash value calculation means (Fig. 6) for calculating a Hash value using the

image of the first region (paragraph [0139], line 1-3), (the hash value is read as an

output value of the hash function), and

wherein said watermark information generation means further stores data of the

Hash value in the watermark information (paragraph [0101], line 5-9), (the storing of the

various data by the ROM is read as the same concept as the storing of the data of the

hash value by the watermark information generating means), as the additional

information (paragraph [0295], line 1-3), (it is read that the pixels which contains an

image data and additional information are combined to generate watermark information)

(4) Regarding claim 5:

Iwamura discloses all the subject matter as described in claim 1 above.

Furthermore, Iwamura discloses a bit sequence (paragraph [0222], line 5-6).

Iwamura does not explicitly mention the decoding of the watermark information.

Pelly et al., in analogous environment, teaches a method and apparatus for detecting data, where decoding of the watermark information (140 in Fig. 4, paragraph [0037], line 3-7).

It would have obvious to one having ordinary skill in the art at the time the invention was made to use the system of Pelly et al., where decoding the watermark information, in the system of Iwamura in order to provide an improvement in copyright protection. The copyright protection is generally performed at a highest level to the watermarking system, so that by providing an Additional copyright protection layer on top of an existing watermarking layer, copyright protection of material can be facilitated (paragraph [0011], line 6-11).

(5) Regarding claim 6:

Iwamura further discloses an apparatus (paragraph [0071], line 2-3) where the bit sequence is a Hash value for a part of the watermark information that contains at least the feature image (paragraph [0139], line 1-8).

(6) Regarding claim 17:

Iwamura further discloses a program for making a computer function as an image processing apparatus of claim 1 (paragraph [0469], line 4-10).

(7) Regarding claim 18:

Iwamura further discloses a program for making a computer implement an image processing method of claim 13 (paragraph [0469], line 4-10).

(8) Regarding claim 19:

Iwamura further discloses a computer readable storage medium storing a program of claim 17 (paragraph [0470], line 1-6).

Contact Information:

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571)270-1670. The examiner can normally be reached on Monday through Friday 8:00 Am to 4:00 PM E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amara Abdi/
Examiner, Art Unit 2624

/Brian Q Le/
Examiner, Art Unit 2624